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PAFOS MANUAL

CHAPTER 9

INSTALLATION AND CHECK-OUT (I&C) MATERIAL

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CHAPTER 9**INSTALLATION AND CHECK-OUT (I&C) MATERIAL****9.1 INTRODUCTION**

Let's suppose that your car was not equipped with factory air conditioning. You have decided that the summer heat has been unbearable and you need air conditioning in your car. So you purchase an air conditioner at a local auto parts store. You are planning to install the air conditioner yourself, but you discover that it is not custom-designed to the interior of your car. Instead, it is generic "one-size-fits-all" equipment. Naturally, you will want to read the installing procedures accompanying your air conditioner. Also, you will need to have any special tools, spare parts, and other materials required for the installation and testing of the air conditioner.

Similarly, during a ship's construction or overhaul many new, sophisticated systems and equipment are installed. Due to their physical and functional nature, these items are not delivered to the ship in a "ready" condition. In some instances, the system or equipment requires assembly, fastening to the deck or bulkhead, system alignment, or other special installing procedures. Also, the item may need to be tested or undergo a probationary period of operation. Installation and Check-out (I&C) material is very instrumental in the process of converting a newly delivered system or equipment to a state of shipboard operational readiness.

9.2 DEFINITION

Installation and Check-out (I&C) material is collectively defined as any item required for the installation, testing, and check-out of a system or equipment. Such items are assembled into an I&C kit. There are three types of I&C material.

- 1) Installation material is normally consumed as the system or equipment is installed. These items include prefabricated hardware foundations and fittings, cables, cable connectors, pins, junction boxes, seals, templates, and gaskets.
- 2) Special tools and test equipment are items that assist in testing or isolating faults in the system or equipment being installed.
- 3) Check-out spares refer to spare and repair parts required to operate and maintain a system during its testing period.

9.3 PLANNING AND BUDGETING

I&C material is planned, programmed, budgeted, and documented on Program Support Data (PSD) sheets (see Chapter 3). This occurs at the same time as the planning and budgeting performed on the system or equipment supported by the I&C material.

9.4 REQUIREMENTS DETERMINATION

One aspect of Integrated Logistics Support (ILS) planning is the determination of requirements. I&C material requirements are based on the characteristics of the system or equipment supported by the material.

A. Installation Material

This material is determined by reviewing installation drawings. Material requirements are based on the individual installation site and tailored to the specific system or equipment being installed.

B. Special Tools and Test Equipment

These are determined by reviewing test procedures and installation drawings and instructions. Requirements are based on the type of equipment and the specific installation site. The required special tools and test equipment are assembled into an I&C kit and provided to installation activities as needed.

C. Check-out Spares

These spares are determined from a material requirements list provided by the equipment manufacturer or system integrator. The computation considers the Lowest Replacement Unit (LRU) required for use as a fault isolation device. It does not consider common hardware items such as nuts, bolts, washers, cabinet sides and braces, or items that have only a static function.

During the planning phase, the Program Managers (PMs) will consider I&C kits already available at the installation site. The generic term, Program Manager (PM) is used to include: Program Executive Office (PEO), Direct Reporting Program Manager (DRPM), Ship Program Manager (SPM), and equipment/system acquisition manager. In addition, a list which separately identifies the three categories of I&C material is submitted directly to the system/equipment PM for approval and acquisition of the material. This list is not submitted as part of the Provisioning Technical Documentation (PTD) package.

Sometimes multiple identical equipment need to be installed by the installation site. In these instances there may not be a single, complete I&C kit for each equipment to be installed. Instead, the various installations share material and parts from a limited number of I&C kits. In this situation, there will normally need to be a complete set of installation material (e.g., cables, connectors, gaskets) for each of the identical equipment being installed. As a result, there may be a requirement for replenishment from time to time (see paragraph 9.8). However, there is not necessarily a need for multiple sets of special tools and test equipment nor check-out spares. The same set of tools can be used for three installations of equipment.

9.5 ACQUISITION AND ORDERING REQUIREMENTS

Installation material, special tools and test equipment (does not include General Purpose Electronic Test Equipment), and check-out spares are generally obtained from the system/equipment manufacturer or system integrator by including them as an option via a separate line item in the hardware contract. Check-out spares may also be obtained by screening the item through the Federal Logistics Information System (FLIS) or a commercial data base to determine if it has a National Stock Number (NSN). Items with an NSN can be requisitioned from the Federal Supply System by the In Service Engineering Agent (ISEA) responsible for the installation. Check-out spares without NSNs or canceled once requisitioned can be acquired from the system/equipment manufacturer or system integrator.

9.6 MANAGEMENT AND CONTROL

Custody, inventory control, and management of I&C material is normally under the control of the Naval Supervising Activity (NSA) responsible for the installation; however, at the option of the PM, custody may be contracted out to the private sector.

A. Installation Material

This material is packaged separately as a kit, clearly marked, and shipped concurrently with the system/equipment to the installation site.

B. Special Tools and Special Test Equipment

These are packaged separately, clearly marked, and shipped to the ISEA responsible for the system/equipment. The ISEA assembles the tools and test equipment into kits for shipment to the installing activities as required. Installing activities are responsible for calibrating the test equipment utilizing calibration specifications and requirements provided by the ISEA. Upon the completion of installation, special

tools, and special test equipment kits are returned to the ISEA for retention until required for the next installation.

C. Check-out Spares

These spares are shipped from the contractor's plant to the ISEA. The ISEA assembles spare parts obtained from the contractor's plant and the Federal Supply System into a kit that is clearly marked as check-out spares. Kits are shipped by the ISEA to the installing activity on an as-required basis. Upon completion of installation and check-out, any remaining parts are returned to the ISEA for updating or disposition.

9.7 MATERIAL IDENTIFICATION AND MARKING

Each I&C item or part is identified by the name of the item, part number, Commercial and Government Entity code, and an NSN or Navy Item Control Number. If known, the contract or purchase order number, unit of issue, quantity, and a cross reference to the system/equipment the material is to support should also be included as part of any material identification. Each shipping container is marked externally to identify the receiving activity, type of material (i.e., installation, tools and test equipment, check-out spares), name of the ship and the ship's Unit Identification Code, system/equipment the material is to support, contract or purchase order number, and the NAVSEA PM responsible for the system/equipment to be installed.

9.8 REPLENISHMENT

A. Installation Material

The necessary material is procured and provided to the installing activity with the end item (see paragraph 9.6.A). This installation material does not normally need to be replenished since it is intended to be consumed during the system/equipment installation phase. However, if required, standard items are ordered from the Federal Supply System and non-standard items are requested from the ISEA. An Unsatisfactory Material Report is submitted for any failed standard items. Failed non-standard items are reported to the ISEA and PM for warranty investigation.

B. Special Tools and Special Test Equipment

Replenishment of these tools and equipment is not normally required. If a special tool or piece of special test equipment must be replaced, the replacement item is requested through the PM. The PM procures the item from the hardware system/equipment manufacturer or the system integrator.

C. Check-out Spares

The ISEA replenishes these spares by requisitioning standard items from the Federal Supply System by citing Project Code "Z02" and Advice Code "2J" for consumables and Advice Code "57" for "7" cognizance material. Non-standard items are obtained from the manufacturer by exercising the option in the hardware contract. Failed repairables are sent to the designated overhaul point, repaired, and returned to the ISEA.

9.9 DISPOSITION OF RESIDUAL MATERIAL

Installation material and check-out spares are turned in using Material Turned Into Stores (MTIS) procedures. Special tools and special test equipment are returned to the ISEA upon completion of installations at a given installation site or at the completion of ship new construction/overhaul at that site. The ISEA uses the residuals to outfit Intermediate and Depot level maintenance activities designated to perform maintenance on the applicable system or equipment. Special tools and test equipment used for installation and check-out at training sites are retained and utilized by that training activity to maintain the system or equipment. Items not required by maintenance activities or training facilities are turned in using MTIS procedures.

9.10 RESPONSIBILITIES

There is a multitude of responsibilities associated with I&C Material that are handled by the Ship Program Managers, System/Equipment Program Managers, In-Service Engineering Agents, and the Installing Activities. The responsibilities of the PEOs and DRPM are unique with regard to the specific program being managed and the charter is the best determinate of the role they play in each acquisition. With regard to I&C spares, the charter will best define whether the specific program will exercise the responsibilities of a SPM or a system/equipment acquisition manager and/or both.

9.10.1 Ship Program Managers

The responsibilities of the Ship Program Managers are to:

- Provide funding for I&C spares through Ship Project Directives.
- Authorize the release of material to installing activities.

9.10.2 System/Equipment Program Managers

The responsibilities of the System/Equipment Program Managers are to:

- Plan, program, and budget for I&C material. The resulting requirements are included on Program Support Data sheets.
- Include an option for I&C material as a separate line item in the hardware contract.
- Obtain I&C requirements determined by the system/equipment manufacturers and system integrators.
- Assign an ISEA to control and manage the I&C material kits.
- Ensure that special tools and special test equipment are turned over to the applicable maintenance or training activity and that residual material is returned using MTIS procedures.
- Ensure that residual check-out spares are returned using MTIS procedures.
- Provide funding data to replenish check-out spares kits.
- Ensure proper FLIS screening is accomplished.
- Monitor all warranted items requiring repair or replacement.
- Authorize cannibalization of an I&C kit when required.

9.10.3 In-Service Engineering Agents

The responsibilities of the ISEAs are to:

- Review and approve I&C material listings.
- Perform technical coding.
- Manage I&C material kits.

- Requisition check-out spares. Submit requisitions citing Project Code 'Z02' and Advice Code '2J' for consumables and Advice Code '57' for '7' cognizance items directly to the Federal Supply System. Material managed by the Defense Logistics Agency (DLA) will be submitted "fill or kill." Copies of all requisitions and purchase orders will be maintained by the ISEA for parts control purposes.
- Return I&C material to stores ashore upon completion of installation.
- Turn over sets of special tools and special test equipment to the Intermediate Maintenance Activity having intermediate level maintenance responsibility or the activity having depot level repair responsibility.
- Retain special tools and special test equipment required for troubleshooting operational equipment.
- Turn in all residual check-out spares that are in ready for issue condition using MTIS procedures.
- Develop plans and procedures for inventory control over I&C material.
- Provide calibration and verification procedures for special test equipment, when required by installing activities.

9.10.4 Installing Activities

The responsibilities of the Installing Activities are to:

- Receive, maintain, and manage I&C material kits during the installation period.
- Determine and request installation material from the ISEA.
- Maintain special tools and test equipment kits in a ready for issue condition during the installation period.
- Return special tools and test equipment and check-out spares upon completion of installation or at the completion of ship new construction/overhaul.
- Turn in residual installation material to stores ashore upon completion of each installation.

- Maintain material identity and separation from like material held for other kits or other purposes.

NOTE: Naval Shipyards or Supervisors of Shipbuilding are usually the installing activities. When installation occurs at a commercial yard, the Naval Supervising Activity is considered to be the installing activity.

9.11 HEADQUARTERS POINT OF CONTACT

The NAVSEA point of contact for I&C material policy is the Fleet Logistics Support Directorate, Material Support Division (SEA 0414).

APPENDIX A ACRONYMS

<u>ACRONYM</u>	<u>DEFINITION</u>
DLA	Defense Logistics Agency
DRPM	Direct Reporting Program Manager
FLIS	Federal Logistics Information System
I&C	Installation and Checkout
ILS	Integrated Logistics Support
ISEA	In-Service Engineering Agent
LRU	Lowest Replacement Unit
MTIS	Material Turned Into Store
NAVSEA ...	Naval Sea Systems Command
NSA	Naval Supervising Activity
NSN	National Stock Number
PEO	Program Executive Office
PM	Program Manager
PSD	Program Support Data
PTD	Provisioning Technical Documentation
SPM	Ship Program Manager